

Appl. No. 10/717,726

Amdt. Dated November 9, 2006

Reply to Office Action of August 9, 2006

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CENTRAL FAX CENTERAMENDMENTS TO THE CLAIMS

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This listing of claims will replace all prior versions and listings of claims in the above-identified application:

1. (currently amended): An apparatus comprising:

a rendering engine to render a foreground of an image to display, the image comprising a number of windows, each window identified by a window identification;
and

a logic, separate from the rendering engine, to blend at least one of first and second background colors with the foreground of the image, after the foreground of the image is rendered by the rendering image engine.

wherein the logic comprises a background color table that, for each window identification, includes the first background color in an A buffer background color column and the second background color in a B buffer background color column.

the logic storing the first background color in the A buffer background color column when displaying the second background color in the B buffer background color column, and displaying the first background color in the A buffer background when storing the second background color in the B buffer background color column.

2. (canceled).

3. (canceled).

4. (original): The apparatus of claim 1, further comprising a frame buffer to store pixels of the foreground, wherein the logic is to retrieve the color values of the foreground.

5. (currently amended): The apparatus of claim 4, wherein ~~the image is comprised of a number of windows, the frame buffer to include~~ includes ping-pong type buffers to store color values of the foreground, the frame buffer ~~to include~~ further

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including a Z buffer to store the window ~~identification of a window~~ where the pixels of the foreground are located, wherein the apparatus further comprises a buffer select table to store an identification of one of the ping-pong type buffers that includes the color values of the foreground of the image.

6. (original): The apparatus of claim 5, wherein the logic is to merge the at least one background color with the foreground of the image based on the identification of the window stored in the Z buffer and the identification of the one of the ping-pong type buffers stored in the buffer select table.

7. (currently amended): A system for generating a merged image to display comprising a number of windows, each window identified by a window identification, the system comprising:

a system memory;

a processor to generate graphics instructions based on execution of a graphics application, wherein the processor is to store the graphics instructions into the system memory;

a rendering engine coupled to the system memory through a graphics bus, the rendering engine to retrieve at least a part of the graphics instructions from the system memory and to render a foreground image based on the retrieved part of the graphics instructions; and

a background merge logic, separate from the rendering engine, and coupled to the system memory through a system bus, wherein the background merge logic is to retrieve at least a part of the graphics instructions from the system memory, wherein the background merge logic includes a background color table, the background merge logic to store at least one of first and second background color colors in the background color table based on the at least part of the graphics instructions, the first background color listed in an A buffer background color column for each window identification and the second background color listed in a B buffer background color column for each window identification, the background merge logic to blend, after the rendering engine has

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rendered the foreground image, the at least one background color received from the video source with a window of the rendered foreground image to generate the merged image,

the background merge logic storing the first background color in the A buffer background color column when displaying the second background color in the B buffer background color column, and displaying the first background color in the A buffer background when storing the second background color in the B buffer background color column.

8. (currently amended): The system of claim 7, further comprising a frame buffer to store a current read buffer, a current write buffer, and a window buffer, and

wherein the background merge logic includes a buffer select table,

wherein the rendering engine is to store color values and an attenuation value of pixels of the foreground image into the current write buffer, ~~[[a]]~~ the window identification for the pixels into the window buffer, and buffer identification for the pixels in the buffer select table.

9. (original): The system of claim 8, wherein the background merge logic further comprises a multiply logic to multiply the at least one background color for the window of the rendered foreground image with the attenuation value of the pixels for the window to generate an adjusted background color.

10. (original): The system of claim 9, wherein the background merge logic further comprises an add logic to add the color values of the pixels of the foreground image with the adjusted background color.

11. (original): The system of claim 7, further comprising a display monitor, wherein the background merge logic is to output the merged image for display on the display monitor.

12. (currently amended): A method comprising:

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retrieving a foreground of an image rendered by a rendering engine, the image comprising a number of windows, each window identified by a window identification;
and

blending [[a]] at least one of first and second background color colors from a background color table with the foreground of the image, independent of the rendering engine and after the foreground is rendered by the rendering engine, the first background color stored in an A buffer background color column of the background color table for each window identification and the second background color stored in a B buffer background color column of the background color table for each window identification;

displaying the image; and

storing the first background color in the A buffer background color column when displaying the second background color in the B buffer background color column, and displaying the first background color in the A buffer background when storing the second background color in the B buffer background color column.

13. (currently amended): The method of claim 12, wherein blending the at least one background color into the image comprises: multiplying an alpha intensity value of the foreground with a value of the at least one background color; and adding a color value of the foreground with the value of the at least one background color.

14. (currently amended): The method of claim 12, wherein the alpha intensity value and the color value of the foreground of the image are stored in an A buffer or a B buffer in a frame buffer and wherein ~~the background color is stored in a~~ background color table ~~that is not in the frame buffer.~~

15. (currently amended): The method of claim 14, further comprising selecting the at least one background color based on an identification of a window.

16. (currently amended): A method of rendering an image, the method comprising:

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performing the following operations in a hardware logic that is separate from a rendering engine that renders at least one foreground pixel for a window in the image, wherein the following operations are performed after the at least one foreground pixel is rendered:

retrieving the at least one foreground pixel from a frame buffer;

blending color data of a video with the at least one foreground pixel, upon determining that the video is in the background at a location of the foreground pixel; and

blending a background pixel with the at least one foreground pixel, upon determining that the video is not in the background at the location of the foreground pixel,

wherein only one of the color data of the video and the background pixel is blended with the at least one foreground pixel.

17. (currently amended): The method of claim 16, wherein the image comprises a number of windows, each window identified by a window identification, and

wherein blending the background pixel with the at least one foreground pixel comprises retrieving the background pixel from a background color table that is internal to the hardware logic based on an identification of the window, the background color table having, for each window identification, a first background color stored in an A buffer background color column and the second background color stored in a B buffer background color column,

the method further comprising displaying the image, and storing the first background color in the A buffer background color column when displaying the second background color in the B buffer background color column, and displaying the first background color in the A buffer background color column when storing the second background color in the B buffer background color column.

18. (original): The method of claim 16, wherein blending the background pixel with the at least one foreground pixel comprises: multiplying an alpha intensity value of

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the at least one foreground pixel with a value of the background pixel; and adding a value of the foreground pixel with the value of the background pixel.

19. (currently amended): A method comprising:

rendering an image in a front-to-back order, wherein the rendering comprises: rendering, by a rendering engine, foreground pixels of the image, the image comprising a number of windows, each window identified by a window identification; and

blending, by a hardware logic that is separate from the rendering engine, the image based on a merger of a background fill pixels with the foreground pixels, wherein, for each background fill pixel, a background color table includes a first background color in an A buffer background color column and the second background color in a B buffer background color column;

displaying the image; and

storing the first background color in the A buffer background color column when displaying the second background color in the B buffer background color column, and displaying the first background color in the A buffer background color column when storing the second background color in the B buffer background color column.

20. (original): The method of claim 19, wherein forming the image based on the merger of the background fill pixels with the foreground pixels comprises: assigning a weight of the background fill pixels relative to the foreground pixels based on alpha intensity values of the foreground pixels; and merging the background fill pixels with the foreground pixels based on the assigned weight of the background fill pixels.

21. (canceled).

22. (currently amended): A method for displaying an image, the method comprising:

rendering, by a rendering engine, color data of a foreground pixel for a window of the image, the color data including an alpha intensity value;

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storing, by the rendering engine, the color data for the foreground pixel into a current write buffer of a ping/pong buffer;

performing the following operations, after rendering of the color data by the rendering engine, in a graphics logic having a background color table, independent of operations by the rendering engine:

retrieving an identification of the window;

retrieving, based on the identification of the window, an identification of a current read buffer of the ping/pong buffer from a buffer select table;

retrieving color data of a background pixel located at a same location in the image as the foreground pixel from the background color table based on the identification of the window and the identification of current read buffer, the background color table having a first background color in an A buffer background color column and a second background color in a B buffer background color column;

adjusting an intensity of the color data of the background pixel based on the alpha intensity value; and

blending the adjusted color data of the background pixel with the color data of the foreground pixel; and

displaying the merged background pixel data and foreground pixel data; and

storing the first background color in the A buffer background color column when displaying the second background color in the B buffer background color column, and displaying the first background color in the A buffer background when storing the second background color in the B buffer background color column.

23. (canceled).